

Species status of the Chestnut-throated Huet-Huet *Pterotochos castaneus*

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The tapaculos of the well-marked genus *Pterotochos* are the largest members of the Rhinocryptidae, a poorly known Neotropical passerine family. From two to three species have been recognised in the genus: the distinctive Moustached Turca *P. megapodius* of central Chile, and one or two huet-huets, the Black-throated *P. tarnii* and Chestnut-throated *P. castaneus*, of Chile's temperate forests. The two huet-huets are allopatric, the former occurring south of, and the latter north of, the Río Bío-Bío (at latitude 37–38° S). Philippi & Landbeck described *P. castaneus* as a full species in 1864. Subsequent opinions on its taxonomic status have mostly treated it as probably or certainly a race of *P. tarnii* (Hellmayr 1932, Behn 1944, Johnson 1967, Fjeldså & Krabbe 1990, Sibley & Monroe 1990). Vuilleumier (1985), however, considered the huet-huets as allospecies, a conclusion followed by Ridgely & Tudor (1994) who noted that the two might nonetheless prove to be conspecific.

We studied both huet-huets in the field during November and December of 1992 and 1993, and here provide the first critical description of the vocalizations of *castaneus*. Recordings were analysed by SNGH using a Kay Elemetrics DSP Sonograph, Model 5500. Dominant frequency was determined from a power spectrum (amplitude [dB] plotted against frequency [Hz]). We also examined 22 museum specimens (7 *castaneus* and 15 *tarnii*, including adults and juveniles of both) at the American Museum of Natural History and the United States National Museum. Distinct differences in voice and plumage, together with ecology, indicate that the two huet-huets are best treated as separate species.

Voice

Previous authors have reported that the songs and calls of the two huet-huets were essentially the same. For example, Johnson (1967) noted that "the rich chestnut-red of the breast and abdomen [of *castaneus*] extends upwards to cover the entire throat and sides of the head. With this exception the two forms appear identical . . . and the same can be said of their habits and call-notes." Ridgely & Tudor (1994) noted "... vocalizations [of *castaneus* are] similar to Black-throated Huet-Huet's", based on Johnson (1967) and our brief experience in 1992 of a single call of *castaneus*.

Our subsequent field experience indicates that while the songs of the two huet-huets are similar, they are readily distinguishable in the field, as are the alarm calls. The song of *castaneus* (Fig. 1A) is an intensifying

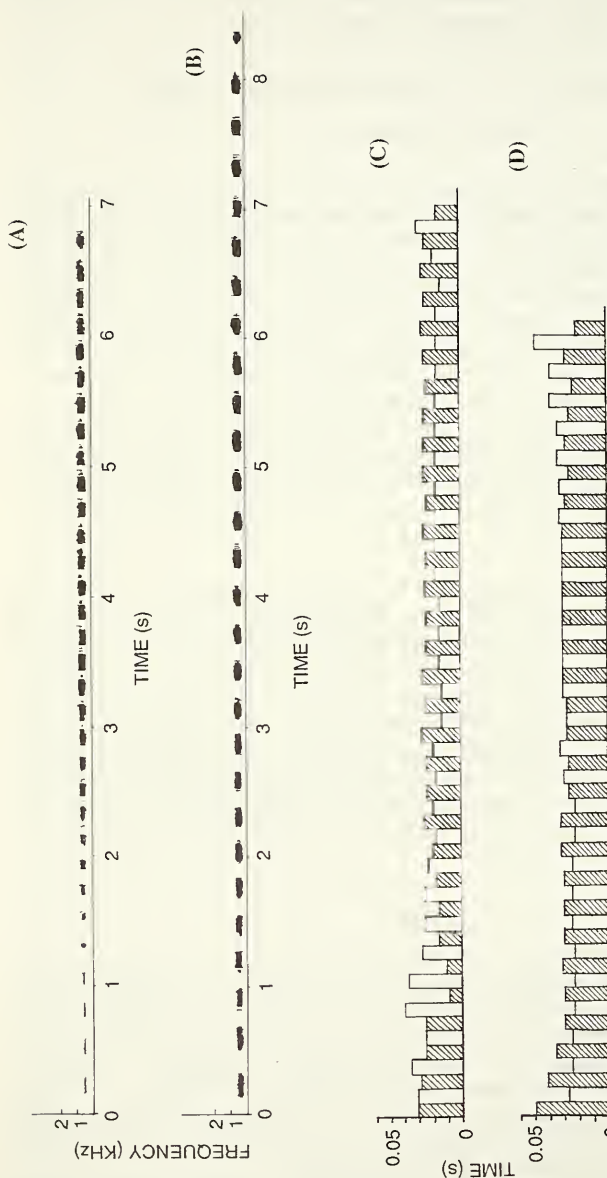


Figure 1. Spectrograms and histograms of songs of Chestnut-throated Huet-Huet *Pteroptochos castaneus* (A and C; Parque Nacional Laguna del Laja, 18 November 1993) and Black-throated Huet-Huet *P. tainii* (B and D; Parque Nacional Puyehue, 17 November 1993). In histograms, shaded bars represent notes, unshaded bars represent inter-note intervals. Note faster-paced, slightly higher-pitched song of *castaneus*, with soft introductory notes and then short notes becoming longer than inter-note intervals, versus longer but fewer notes of *tainii* becoming shorter than inter-note intervals. Recordings by Howell.

series of resonant hoots, often with a slight quavering quality which may suggest a screech-owl (*Otus*). It is higher, softer, and faster-paced, less gruff, than the song of *tarnii*, lacking the deep, pulsating quality of that form. Songs consist of more notes (32–45) than *tarnii* (20–29) and have a dominant frequency of 500–600 Hz. Notes overall are 0.04–0.15 s in duration, with inter-note intervals of 0.06–0.15 s (Fig. 1C). The first few notes are soft and the main part of the song consists of notes that increase from 0.07 to 0.13 s in duration while the inter-note intervals decrease from 0.13 to 0.09 s; notes change quickly from being shorter than to longer than inter-note intervals, rather than changing from longer to shorter in *tarnii* (compare Fig. 1C and 1D). Thus, unlike *tarnii*, the song speeds up overall in tempo and ends abruptly. It may be written as *weh-weh-weh-weh-wuubwuubWuubWuub* . . ., and lasts about 6–8 s, with individual notes too fast to count (5 notes/s). We heard at least five birds singing this song type in two areas about 6 km apart in Parque Nacional Laguna del Laja, Bío-Bío prov. (37° 21' S), and another bird singing along Highway 115, near Las Garzas, Talca prov. (35° 48' S).

The song of *tarnii* (Fig. 1B) is a powerful, pulsating, far-carrying series of deep, slightly resonant hoots. Songs we have recorded comprised 27–29 notes (Ridgely & Tudor [1994] reported 20–25 notes), with a dominant frequency of 400–500 Hz. Notes overall are 0.10–0.25 s in duration, separated by inter-note intervals of 0.12–0.24 s (Fig. 1D). After the relatively long first three notes, the notes are fairly uniform in length, decreasing slightly overall from 0.15 to 0.12 s while the inter-note interval increases from 0.12 to 0.19 s (Fig. 1D). Thus the song slows overall in tempo and seems to run down slightly at the end; the last note is shortest (0.10 s) and separated from the rest of the song by a relatively long interval (0.24 s). The song may be written as *Wooh, WoohWoohWooh* . . . *wuh*, and lasts 7–9 s; the tempo is usually slow enough to count individual notes (3.5 notes/s). We have heard this song type throughout the range of *tarnii* from Parque Nacional Nahuel Buta, Malleco prov. (37° 53' S) to Puerto Aisen, Aisen prov. (45° 12' S).

The alarm calls of the two Huet-Huets are also quite different. This call in *tarnii* (Figure 2A) is a slightly liquid, powerful, relatively low-pitched, often persistent clucking, *huet huet-huet-huet huet huet-huet, huet* . . . with up to ten notes in rapid series; the common two-note phrase is the onomatopoeic derivation of this species' common name. (This is *not* the song as suggested by Fjeldså & Krabbe [1990].) The call covers a greater frequency range than *castaneus*, with the energy concentrated in a low-pitched, drip-like bulge (compared Figs 2A and 2B). When birds are excited, these calls are given most rapidly and are spaced 0.20–0.21 s apart.

The alarm call of *castaneus* (Fig. 2B) is a quite different sounding, slightly nasal clucking, *wehk wehk-wehk-wehk wehk-wehk wehk wehk* . . ., which SNGH mistook for a squirrel when he first tape-recorded it, even though he was familiar with the analogous call of *tarnii*. The call lacks the energy concentration at low frequency of *tarnii*, sounds higher-pitched, and is faster-paced (notes 0.10–0.13 s apart) when birds are excited.

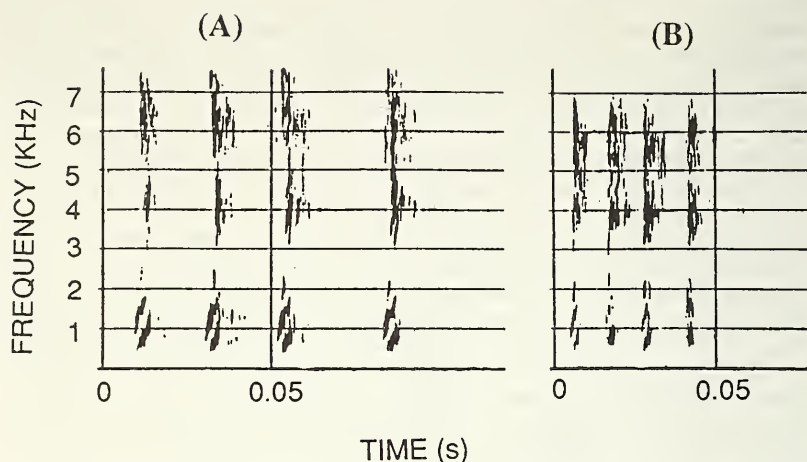


Figure 2. Spectrograms of alarm calls of Black-throated Huet-Huet *Pteroptochos tarnii* (A), and Chestnut-throated Huet-Huet *P. castaneus* (B). Compare broader overall frequency range of *tarnii*, concentrated in a low-pitched, drip-like bulge, versus narrower frequency range of faster-paced *castaneus* calls. Locations and dates as Fig. 1. Recordings by Howell.

In addition to these vocalisations, *tarnii* in November and December frequently gave a variety of other calls. These included a gruff, intensifying *woohr woohr woohr* . . .; varied series of loud, sharp, hollow hoots, the first note often slightly explosive, the series usually descending overall and increasingly slower-paced, *wook! wook wook wook* . . .; a steady-paced, shorter series of hoots, *wook wook wook* . . .; and a single, loud, slightly hollow *huuk!* In contrast, other than songs and alarm calls, we heard only one *castaneus* give any other call type, and then only once, in 1992: a sharp nasal note followed by a steady-paced series of hollow hoots, *wehk! wook wook wook* . . ., analogous to a call of *tarnii*. Whether *castaneus* really is less vocal in general, or whether this difference may reflect some seasonal difference, related perhaps to nesting season, remains to be shown.

Plumage

Hellmayr (1932) and Ridgely & Tudor (1994) are the only authors to have noted differences other than throat and chest colour between the two huet-huets. For example, Fjeldså & Krabbe (1990) dismissed the plumage differences as “*Ssp castaneus* has throat rufous-chestnut like chest”; and see the quote from Johnson (1967) at the start of the voice discussion.

The two huet-huets, in fact, look strikingly different. The forecrown, supercilium, throat, foreneck, and upper chest of *castaneus* are deep, rich chestnut; the auriculars, hindcrown, and hindneck are dark slaty blue-grey; a bold whitish eye-ring is more distinct in life than in skins

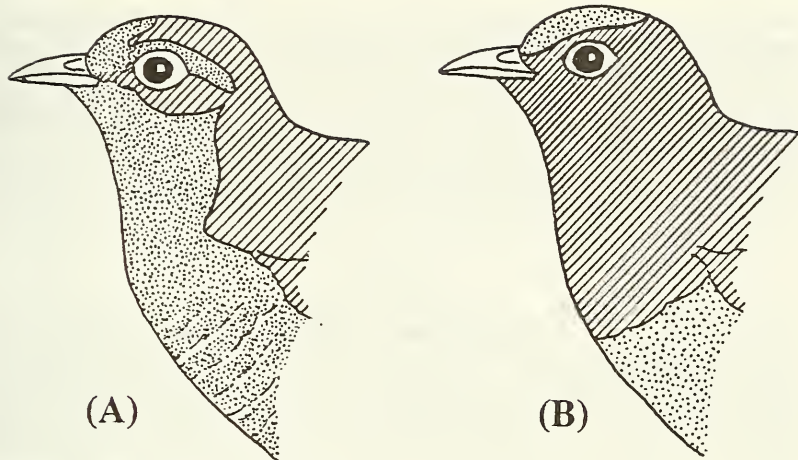


Figure 3. Head and chest patterns of Chestnut-throated Huet-Huet *Pteroptochos castaneus* (A) and Black-throated Huet-Huet *P. tarnii* (B). Hatching represents slaty blue-grey in A, slaty grey in B; stippling represents chestnut in A, rufous in B.

(Fig. 3A). The head, neck, upper chest, and back of *tarnii* are overall dark slaty grey with a rufous crown patch extending back to the hindcrown; the eye-ring appears narrower than on *castaneus* (Fig. 3B). Besides the obvious pattern differences, the red on the crown is darker and less extensive, and the grey hindneck brighter and bluer in *castaneus*.

The chest of *castaneus* is rufous, slightly paler than the foreneck, and with some paler barring, while the belly, flanks, and undertail coverts are boldly scalloped black, buff, and olive-tawny to rufous. The lower chest, belly, flanks, and undertail coverts of *tarnii* are rufous with variable black and cinnamon scalloping. In the field the underparts of *castaneus* appear boldly scalloped, with obvious pale chevrons, whereas the underparts of *tarnii* appear rufous with fewer dark chevrons.

Castaneus has slaty olive-grey upperparts, the rump washed with cinnamon-rufous and barred black and pale buff distally. The upperparts of *tarnii* are slaty grey, washed olive on the lower back, with the rump contrastingly rufous and barred black and cinnamon-buff distally. Thus the upperparts of *castaneus* are generally paler and browner, with more distinct pale rump bars, and lack the contrasting rufous rump of *tarnii*.

The wings of *castaneus* are rich olive-brown with narrow whitish scallops on the lesser coverts, a cinnamon bar on the tips of the median coverts, and a broader and paler cinnamon-buff bar on the tips of the greater coverts; these wing-bars are distinct in the field. The wings of *tarnii* appear uniform slaty olive-brown overall, with dull and poorly contrasting chestnut tips to the coverts not visible in the field. The tail of *tarnii* is blackish, darker than the blackish-brown tail of *castaneus*.

Juveniles are duller overall than the adults. Relative to the adult, juvenile *castaneus* has an indistinct face pattern with the chestnut areas washed dusky and the grey areas washed brownish olive. The throat, foreneck, and underparts are dusky chestnut, mottled dusky pale cinnamon on the lower chest, with duller cinnamon bars on the belly, flanks, and undertail coverts. Juvenile *tarnii* has the crown sooty grey with broad, dull rufous streaks; the rump and lower chest to undertail coverts are dusky chestnut with indistinct black bars.

Ecology

The two huet-huets live in somewhat different habitats, although this may be more due to different climate (particularly less rainfall as one moves north) than habitat choice *per se* by the birds. *Tarnii* inhabits the forest floor and understory thickets (especially bamboo) of humid temperate rain forest. It also occurs in second-growth, logged areas where it tends to be restricted to streamsides, and other areas with sufficient undergrowth such as tall bamboo thickets. *Castaneus* inhabits the forest floor and understory (especially bamboo) of humid to semiarid forest, chaparral-woodland, and adjacent chaparral thickets where it may favour gullies with running water (and lush vegetation). It thus occurs in drier and slightly more open habitats than *tarnii*.

Both species are generally shy and elusive, especially when singing, and run quickly and silently with their tail held level or slightly cocked. Huet-huets are often most conspicuous when agitated, and giving their *huet-huet* call, when a bird may perch in the open on bamboo or tree branches, cocking and dipping its tail. Their very large feet with long claws are used for scratching in leaf litter to expose their insect food. The birds may scratch and dig with one foot at a time, like a chicken, or 'jump-scratch' with both feet simultaneously, a habit recalling the Emberizine towhees *Pipilo* and Fox Sparrow *Passerella iliaca* of North America. These feeding techniques are shared with the other *Pterotochos* species, the Moustached Turca *P. megapodius*. Fjeldså & Krabbe (1990) questioned this foot-scratching behaviour since they knew of no tapaculos that fed in that manner. In fact, the presence of huet-huets can be detected readily by diagnostic raked or cleared areas on the forest floor. We have also watched the Ochre-flanked Tapaculo *Eugralla paradoxa* foraging by scratching and jump-scratching with its feet in bamboo litter. Further, in July 1994 SNGH watched Ocellated Tapaculos *Acropternis orthonyx* in Ecuador scratching with their feet, to the extent that they dug holes up to 15 cm deep in mats of loose, dead bamboo litter and remained there out of sight for minutes at a time, scratching loudly.

Conclusions

The differences in songs and calls of the two huet-huets are distinct, and appear consistent throughout the ranges of the two forms; also, we have not heard the songs or calls of one species within the range of the other. These vocal dissimilarities parallel the well-known and striking

plumage differences. No signs of plumage intergradation have been reported although the two forms occur within a few km of one another, such as on either side of the mouth of the Bío-Bío river (Behn 1944, Ridgely & Tudor 1994). These plumage differences are greater than those among any subspecies and many closely related species of tapaculos. The two forms also occupy slightly different habitats. Thus we recommend that the doubt surrounding the species status of the Chestnut-throated Huet-Huet *P. castaneus* be removed, and that it be considered a full species, separate from the Black-throated Huet-Huet *P. tarnii*.

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A critique of Walters' (1993) new bird records from Belize

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Walters (1993) reported records of six species of birds from Belize (formerly British Honduras), Central America, based primarily on birds banded between 1960 and 1964 by W. P. Nickell. Although five of these species would represent first records for the country, a review of the records in a wider context casts doubt upon their authenticity. It should be remembered, however, that during the early 1960s little or no